

REMARKS

STATUS OF CLAIMS

In response to the Office Action dated May 18, 2007, claims 1, 9 and 20 have been amended, and claims 21-24 have been added. Claims 1-24 are now pending in this application. No new matter has been added.

The indication that claims 11-19 are allowable and that claim 10 is objected to, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims is acknowledged and appreciated.

CLAIM OBJECTIONS

Claims 1-8 have been objected as having a minor informality. By this response, claim 1 has been amended to change "...for quantizing an output of the integrator..." to "...for quantizing an output of the first integrator...", as suggested by the Examiner. Consequently, withdrawal of this objection to the claims is respectfully solicited.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102

Claims 1-9 and 20 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Ichimura et al. (U.S. Patent 5,701,124).

To expedite prosecution, independent claims 1, 9 and 20 have been amended to more clearly delineate differences between the present invention and Ichimura et al. Thus, amended independent claim 1 delineates:

A correlator, which figures out a correlation between an input signal which is *an impulse* train and *a template train which is* a predetermined time-series signal, comprising:

a template train generator for generating the template train which is a signal in which a template is repeated;

a multiplier for calculating through multiplication a correlation value between the template train and the impulse train;

a first integrator for integrating an output of the multiplier;

a quantizer for quantizing an output of the first integrator; and

a negative feedback path for negatively feeding an output of the quantizer back to the first integrator.

Independent claims 9 and 20 have been similarly amended.

The invention now recited in amended independent claims 1 to 9 and 20 relates to a correlator for impulse radio communication (Ultra Wide Band Radio, UWB Radio) and a receiver including the correlator. In contrast, the apparatus disclosed in Ichimura et al. relates to an apparatus for EA modulation of an input audio signal to form a one-bit digital signal, and for performing signal processing in the amplitude direction, such as equalizing, filtering or fading, as a sort of attenuation, on the one-bit digital signal.

The inventions recited in the present claims belong to the field of communications technology, while what is disclosed in Ichimura et al. belongs to the field of audio technology. That is, the inventions recited in the present claims belong to an entirely different technical field than the apparatus disclosed in Ichimura et al. Therefore, a person of ordinary skill in the art would have no realistic reason to apply what is disclosed in Ichimura et al. to the field of communications technology to which the present invention is directed.

Further, the Examiner states on page 3 of the second Office Action that the multiplier recited in claims 1, 9, and 20 of the present application corresponds to the multiplier (3) in Fig. 7

of Ichimura et al. However, as described on column 4, line 66 to column 5, line 3 of Ichimura et al., the multiplier (3) in Fig. 7 of Ichimura et al. is a coefficient multiplication means responsive to "one-bit digital data" to multiply the one-bit digital data with "a multi-bit multiplication coefficient", for example, a 16-bit multiplication coefficient, generated in a coefficient generator (4). In contrast, the multiplier recited in amended independent claims is a multiplier that calculates a correlation value between an input signal that is an impulse train and a predetermined time-series signal by multiplying the two signals. Therefore, the multiplier (3) of Ichimura et al. is entirely different from the multiplier of the present application.

As described above, the invention now recited in amended independent claims 1, 9 and 20 is clearly different from what is disclosed in Ichimura et al. More specifically, Ichimura et al. does not anticipate amended independent claims 1, 9 and 20 as each element of these claims is not found in Ichimura et al., either expressly described or under principles of inherency. Therefore, claims 1-10 and 20, as amended, are patentable over Ichimura et al. and their allowance is respectfully solicited.

NEW CLAIMS

New claims 21-24 are submitted. Each of claims 21-24 depends from independent claim 1. Therefore, claims 21-24 are patentable over Ichimura et al. and their allowance is respectfully solicited.

CONCLUSION

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Edward J. Wise, Reg. No. 34,523, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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